

RECLAMATION

Managing Water in the West

Improving Water Management:

Progress Report for the
Mid-Pacific Region
Water Conservation Team



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

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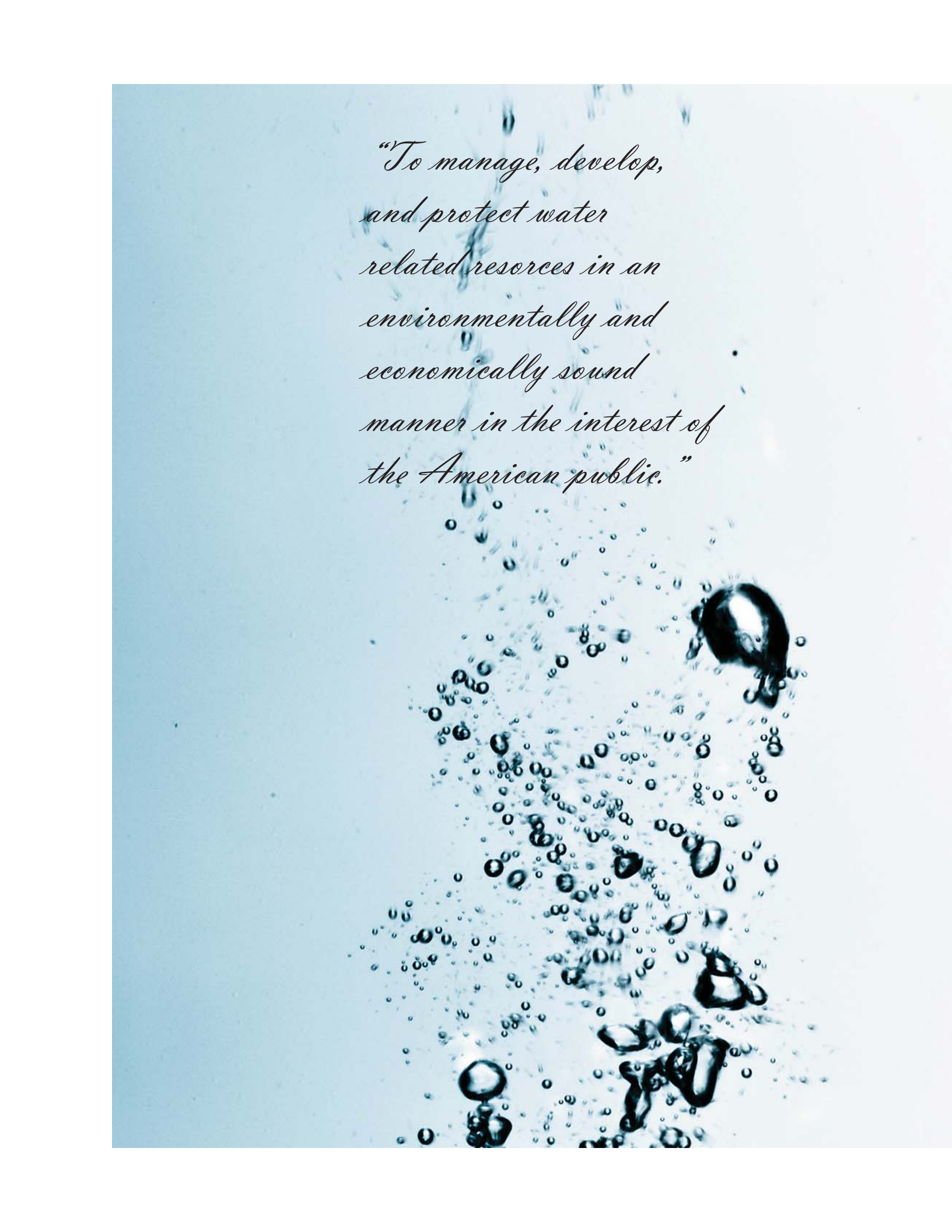




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*"To manage, develop,
and protect water
related resources in an
environmentally and
economically sound
manner in the interest of
the American public."*

Introduction



Federal involvement has been key to nearly all large-scale development of water resources in the United States, and the Bureau of Reclamation remains the largest purveyor of water in the West. Reclamation's role, which was originally to develop water supplies to facilitate and encourage settlement of the arid West, must now address changing economic and environmental realities that will limit the construction of future projects. This has caused Reclamation to change from an agency whose primary mission was to develop water supplies to one that also must focus on efficiently managing those developed water resources.

Reclamation's current mission as defined is "to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." Therefore in addition to irrigation water deliveries, Reclamation's responsibilities now include water conservation, hydroelectric power generation, municipal and industrial water supplies, flood control, outdoor recreation, enhancement of fish and wildlife habitats, water quality protections, and research. In California, Reclamation began its water conservation efforts in the late 1960's and early 1970's. Typical projects included installation of state-of-the-art irrigation delivery systems including measured turnouts forming the foundation of effective water management. At that time, Reclamation developed irrigation scheduling models that could help farmers schedule crop irrigations and determine proper irrigation amounts. Reclamation staff teamed with Westlands Water District, the largest water district in the United States, on a pilot program called the Irrigation Management System (IMS) which provided irrigation scheduling information to participating district growers. As a result of this pilot, several companies began using the Reclamation IMS models to provide irrigation technical services to farms throughout the Central Valley. In addition, several water agencies began hiring water conservation staff to provide these services to their farmers.

Reclamation Reform Act

The Reclamation Reform Act (RRA) establishes the conditions under which entities can receive and use irrigation water from Reclamation projects. RRA requires Reclamation to encourage efficient use of water from federal projects. The RRA, Section 210(b), created a formal requirement for most irrigation districts receiving Federal water to prepare and update water conservation plans every five years.

Central Valley Project Improvement Act

The Central Valley Project Improvement Act (CVPIA, Title XXXIV of Public Law 102-575) was signed into law in 1992. Section 3405 (e) of the CVPIA included specific water conservation requirements. This law requires Reclamation to:

- Establish a water conservation office;
- Develop and revise criteria to evaluate water conservation plans;
- Evaluate water conservation plans according to the criteria.

Introduction

Districts receiving water from the Central Valley Project are contractually required to complete a water management plan conforming to the criteria established by the water conservation office. Currently over 100 Districts have approved plans and the team is tracking the implementation of these plans through annual updates.

Legal Commitments

In 1991 the National Wildlife Federation released a report entitled “Gathering Dust” which explored the lack of serious planning efforts made by districts up to that time as required by RRA. A subsequent lawsuit caused Reclamation to reopen the Environmental Impact Statement (EIS) process developed to implement the Act. The final EIS and Record of Decision were released in 1996. As a result, Reclamation implemented the “preferred alternative”, which includes the Water Conservation Field Services Program (WCFSP). The WCFSP provides funding to Area Office staff to assist districts with planning and implementation of plans, education, and demonstration projects through technical and financial assistance.

Objectives and Action Plan

Our short and long range actions are categorized by objective and are summarized as follows:

Advance Water Management Planning:

- Implement CVPIA
- Support States’ efforts to promote better water management
- Create opportunities for improved water management
- Integrate the Water Conservation Programs with other programs

Promote increased awareness of water conservation through outreach:

- Provide educational opportunities to districts
- Support youth and teacher education efforts
- Promote water conservation through public outreach programs

Foster innovation in water management through our grant programs:

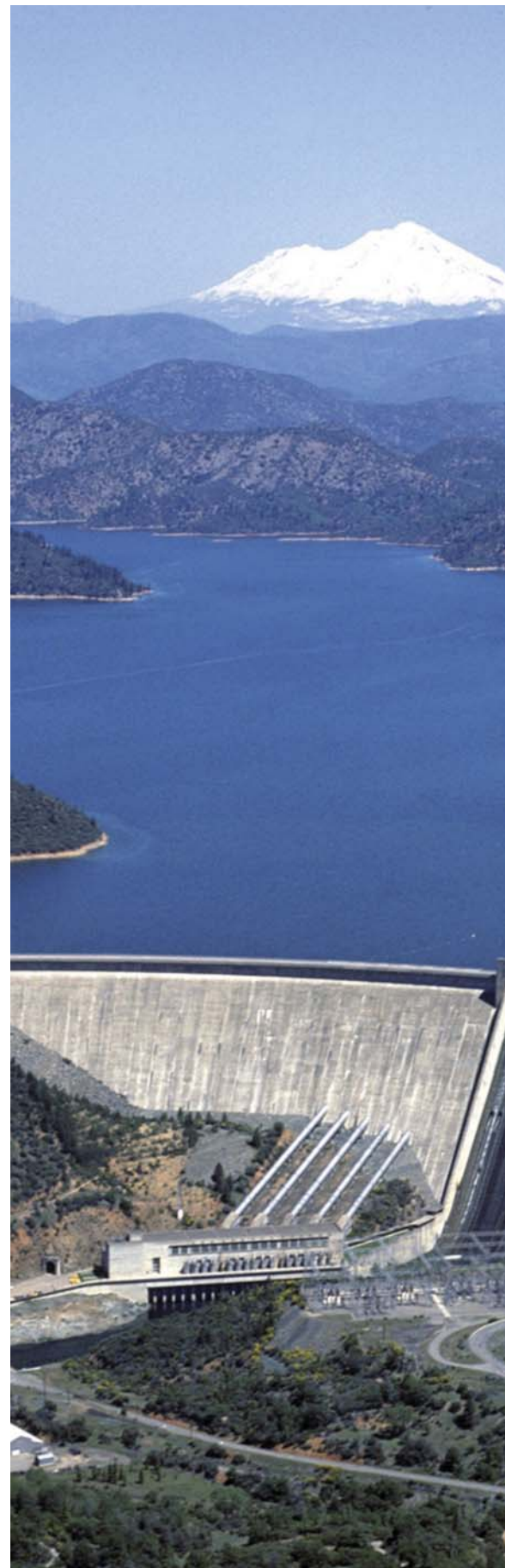
- Facilitate the Water for America program (which includes the (WCFSP)
- Administer the Region’s grant program
- Promote other agencies complementary programs

Support research and technology transfer/distribution efforts in water conservation:

- Provide support for technical training and technology transfer
- Promote the training opportunities provided by Reclamation’s Denver Technical Service Center
- Identify and support needed research efforts
- Offer expertise through participation on research teams
- Partner with educational institutions to advance water conservation

Develop alliances with key agencies for a more effective program

- Network with partners to coordinate efforts, including the States of California, Nevada and Oregon
- Participate in appropriate bay and delta activities



Financial Assistance Programs

Mid-Pacific Region Financial Assistance Programs

The Mid-Pacific Region's financial water conservation assistance efforts have focused on accelerating the implementation of water conservation activities through partnerships with water contractors, state and local agencies, universities, and other non-profit organizations. These efforts began shortly after passage of the Central Valley Project Improvement Act and have been expanded through the creation of the Water Conservation Field Services Program, Water 2025, and the California Bay-Delta Program. Currently all water conservation assistance is allocated through competitive solicitations available through the Grants.gov website. Generally, recipients must show at least a 50% non-federal cost share and be able to report the benefits of the activity by the end of the activities implementation. The following are the various financial assistance programs administered by the Region's Water Conservation Program.

Water Conservation Field Services Program

Year	Grants Awarded	Federal Portion	Awardee Portion	Total
2006	35	\$1,093,424	\$1,614,928	\$2,708,352
2007	28	\$1,143,052	\$1,731,987	\$2,875,039
2008	15	\$512,442	\$1,045,525	\$1,557,967
Total Grants Awarded	78	\$2,748,918	\$4,392,440	\$7,141,358

(This data reflects the Mid-Pacific Region's portion of the Water Conservation Field Services Program)

The WCFSP began in 1996 to “encourage the full consideration and incorporation of prudent and responsible water conservation measures in the operations of non-federal recipients of irrigation water from Federal Reclamation projects.” This local Area Office driven program typically provides small grants to Reclamation contractors and emphasizes projects that address one of the following elements:

- Water Management Planning;
- Water Conservation Education;
- Demonstration of Innovative Technologies; and
- Implementation of Conservation Measures.

Since the program's inception, the Mid-Pacific Region has awarded over 350 WCFSP grants for projects such as: canal lining and piping, irrigation scheduling, system delivery, system modernization, residential rebate programs, education, and measurement. Including water district contributions, the WCFSP has resulted in over \$21.2 million invested in water conservation projects in the Mid-Pacific Region.

Financial Assistance

Water 2025 Challenge Grant Program

Year	Grants Awarded	Federal Portion	Awardee Portion	Total
2006	2	\$370,000	\$720,500	\$1,090,500
2007	13	\$2,912,244	\$5,627,778	\$8,540,022
2008	9	\$1,988,926	\$3,778,232	\$5,767,158
Total Grants Awarded	24	\$5,271,170	\$10,126,510	\$15,397,680

(CALFED is unique to California which includes a portion of Lower Colorado Region)

The Mid-Pacific Region Water Conservation Office participates on the Water 2025 Challenge Grant Program Team. The Water 2025 Challenge Grant Program provides funding to irrigation and water districts and states for projects focused on water conservation, efficiency, and water marketing.



The goal of the Challenge Grant Program is to stretch existing water supplies by enhancing water conservation, use efficiency, and resource monitoring. The table above shows the portion of grants awarded in the Mid-Pacific Region. Since 2004, there have been 122 Challenge Grants funded. Reclamation wide, a total of \$25.5 million in Federal funding has resulted in approximately \$96 million of water management improvements in 17 western states. Those projects created new water banks, advanced water conservation technologies and improved water management. Sixteen completed projects have resulted in 75,640 acre feet of water better managed or saved annually.

CALFED Bay-Delta Grant Program

Year	Grants Awarded	Federal Portion	Awardee Portion	Total
2006	13	\$2,708,463	\$3,843,435	\$6,551,898
2007	11	\$1,601,996	\$2,473,970	\$4,075,966
2008	7	\$1,766,364	\$3,897,170	\$5,663,534
Total Grants Awarded	31	\$6,076,823	\$10,214,575	\$16,291,398

(CALFED is unique to California which includes a portion of Lower Colorado Region)



The CALFED Bay-Delta Program is a unique collaboration among 25 state and federal agencies that came together with a mission to improve California's water supply and the ecological health of the San Francisco Bay/Sacramento-San Joaquin River Delta.

CALFED was created because of the importance of the Bay-Delta to California. The majority of the state's water runs through the Delta and into aqueducts and pipelines that distribute it to 25 million Californians, making it the single largest and most important source of water for drinking, irrigation, and industry. The Water Use Efficiency Grant program has been an important element of CALFED, with the federal grant program starting in 2006. CALFED grants are evaluated by a team of federal and state water conservation experts and awarded to recipients that can provide a benefit to the Delta. In the past three years Reclamation has awarded 31 grants for a total of \$16 million.

Water Conservation Education Grant Program

Year	Grants Awarded	Federal Portion	Awardee Portion	Total
2006	1	\$56,000	\$ -0-	\$56,000
2007	1	\$47,163	\$ -0-	\$47,163
2008	1	\$99,980	\$120,696	\$220,676
Total Grants Awarded	3	\$203,143	\$120,696	\$323,839

(Water Conservation Educational Grant Program is unique to the Mid-Pacific Region only)

The Water Conservation Education Grant Program was developed for educational institutions and organizations located in the Mid-Pacific Region to provide water conservation education to the general public within the Central Valley Project (CVP) service area. The purpose is to increase public awareness of efficient water use, in order to reduce competition for the water resources and thus ease the strain on the limited water supply, resulting in increased benefits to the human population, fish and wildlife. This work is to be accomplished throughout the Mid-Pacific Region to benefit the Central Valley Project and public at large.

Technical Transfer Grants Program

Year	Grants Awarded	Federal Portion	Awardee Portion	Total
2006	1	\$84,000	\$ -0-	\$ 84,000
2007	1	\$499,000	\$ -0-	\$499,000
2008	2	\$350,718	\$ -0-	\$350,718
Total Grants Awarded	4	\$933,718		\$933,718

(Water Conservation Educational Grant Program is unique to the Mid-Pacific Region only)

The Technical Transfer Grant Program was created to provide state of the art water conservation technology, technical assistance and expert modernization advice to water districts which are supplied with water from the Central Valley Project. Grants are offered on a competitive basis to institutions of higher education. Grants through this program have funded The Irrigation Training and Research Center (ITRC) at California Polytechnic State University, San Luis Obispo, and the Agricultural Teaching and Research Center (ATRC) at Chico State University.

Financial Assistance

Grants from the Bureau of Reclamation for personnel and infrastructure, support from the California State University System, and grants from the California Public Utilities Commission have funded the development of demonstration and training facilities. These facilities were created to support California water districts in their efforts to implement conservation plans.

One of the goals of developing facilities and expertise is to support the adoption of new technologies in water measurement and control that will lead to water conservation. By providing a local facility, local training opportunities, and technical support, adoption of new water conservation technologies is accelerated. The facilities at the ATRC and ITRC incorporate demonstration sites where various types of Supervisory Control and Data Acquisition (SCADA) and water measurement technologies can be shown and demonstrated.



Water Conservation Management Plans

Central Valley Project Improvement Act, Section 3405 (e)

Section 3405 (e) of the CVPIA requires that the Secretary of the Interior establish Criteria to evaluate CVP Plans by April 30, 1993, and that the Criteria be reviewed at least every 3 years and revised, if necessary. These Criteria were intended to evaluate water conservation plans required under the 1982 Reclamation Reform Act. Reclamation drafted and issued the initial "Criteria for Evaluating Water Conservation Plans" in April 1993. The Criteria were revised in September 1996. The Criteria were again revised in 1999, 2002 and 2005. Reclamation completed updated Criteria in December 2008. Shortly, a new Water Management Planner will be available in hard copy, CD format, and online to assist and guide the districts in complying with the Criteria.



Although the CVPIA is a public law, compliance is required contractually under the terms of most contracts between water users and Reclamation. Section 26, of most contracts, deals with Water Conservation. The following is an example, commonly included as section 26:

“26. (a) *Prior to the delivery of water provided from or conveyed through Federally constructed or Federally financed facilities pursuant to this Contract, the Contractor shall be implementing an effective water conservation and efficiency program based on the Contractor’s water conservation plan that has been determined by the Contracting Officer to meet the conservation and efficiency criteria for evaluating water conservation plans established under Federal law. The water conservation and efficiency program shall contain definite water conservation objectives,*

Water Conservation Plans

appropriate economically feasible water conservation measures, and time schedules for meeting those objectives. Continued Project Water delivery pursuant to this Contract shall be contingent upon the Contractor's continued implementation of such water conservation program. In the event the Contractor's water conservation plan or any revised water conservation plan completed pursuant to subdivision (d) of Article 26 of this Contract have not yet been determined by the Contracting Officer to meet such criteria, due to circumstances which the Contracting Officer determines are beyond the control of the Contractor, water deliveries shall be made under this Contract so long as the Contractor diligently works with the Contracting Officer to obtain such determination at the earliest practicable date, and thereafter the Contractor immediately begins implementing its water conservation and efficiency program in accordance with the time schedules therein.

(b) Should the amount of M&I Water delivered pursuant to subdivision (a) of Article 3 of this Contract equal or exceed 2,000 acre-feet per Year, the Contractor shall implement the Best Management Practices identified by the time frames issues by the California Urban Water Conservation Council for such M&I Water unless any such practice is determined by the Contracting Officer to be inappropriate for the Contractor.

(c) The Contractor shall submit to the Contracting Officer a report on the status of its implementation of the water conservation plan on the reporting dates specified in the then existing conservation and efficiency criteria established under Federal Law.

(d) At five year intervals, the Contractor shall revise its water conservation plan to reflect the then current conservation and efficiency criteria for evaluating water conservation plans established under Federal law and submit such revised water management plan to the Contracting Officer for review and evaluation. The Contracting Officer will then determine if the water conservation plan meets Reclamations's then current conservation and efficiency criteria for evaluating water conservation plans established under Federal law.

(e) If the Contractor is engaged in direct ground-water recharge, such activity shall be described in the Contractor's water conservation plan."

Standard Criteria

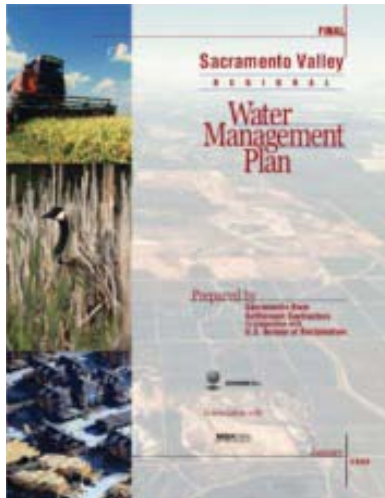
The purpose of the Criteria is to help facilitate the preparation of water conservation plans (Plans) that promote the highest level of water-use efficiency within each district. The Criteria affords the districts the opportunity to analyze their operations and develop reasonably achievable goals through the use of best available, cost-effective technology and best management practices (BMPs). The Plans examine various aspects of district operations including a description of the district, an inventory of the water resources available, and BMPs for both agricultural and urban districts.

During the 2008 revision process, the agricultural BMPs were modified to reflect the need for district outflow measurements and the integration of GIS to their management system. There are 14 BMPs for municipal and industrial water districts that were developed by the California Urban Water Conservation Council (CUWCC) in 2007. These are currently being revised to provide clear and concise language and direction for the districts. Reclamation is fully engaged in the revision process and anticipates continued adoption and use of CUWCC BMPs after revision.



Reclamation staff at both the area, and regional offices are available to assist districts with the development of their Plans. The process for Plan approval begins with district's submitting their Plan for evaluation. Once Reclamation has reviewed and approved/deemed adequate a plan and the district's Board has adopted the Plan by resolution, that district is listed in the "Notice of Draft Decision" (Notice) in the Federal Register. The Notice is intended to solicit public comments. If no comments are received that require Plan modification, that Plan is then deemed adequate. The Plan information is entered in the database and Reclamation staff tracks the implementation of the Plan through annual updates submitted by districts.

Reclamation currently has deemed adequate under CVPIA more than 100 water management plans. Plans must be revised every five years, and districts report their progress annually via the BMP reporting databases located on either the Agricultural Water Management Council or CUWCC website. The annual updates help to insure that those plans submitted by agricultural and urban water contractors are being effectively implemented.



Sacramento Valley Regional Water Management Plan

Reclamation developed the Regional Criteria for Evaluating Water Management Plans for the Sacramento River Contractors (Regional Criteria) as an alternative pilot program to the current Standard Criteria for Evaluating Water Management Plans (Standard Criteria). If plans submitted under the pilot program are unsuccessful, these Regional Criteria will be discontinued. In that case all subsequent Plans will be evaluated under the Standard Criteria.

The Sacramento Valley Regional Water Management Plan (Regional Plan) was prepared by the Sacramento River Settlement Contractors (SRSC) in cooperation with the Bureau of Reclamation, in accordance with the Regional Criteria in January 2006.

The Regional Plan was adopted in January 2008. The participants are:

Anderson-Cottonwood Irrigation District
Glenn-Colusa Irrigation District
Provident-Codora-Glenn Irrigation District
Reclamation District No. 108
Reclamation District No. 1004
Meridian Farms Water Company
Sutter Mutual Water Company
Pelger Mutual Water Company
Natomas Central Mutual Water Company

The geographic boundary of the area covered by the Regional Plan and served by the SRSCs is the portion of the Sacramento River Basin from Shasta Dam to the Sacramento metropolitan area.

The Regional Plan is organized to provide regional, sub-basin, and district specific water use, supply, and facilities information to support improved water management. The structure of which is to identify, quantify, and link specific CALFED goals with practical on-farm and district distribution system water management actions. In order to achieve water-use efficiency goals, targeted benefits (TB) and quantifiable objectives were identified for each district within each of the sub-regions of the Regional Plan participants. The TBs are geographically specific in-stream flow and

Water Conservation Plans

timing, water quality, and water quantity benefits that can potentially be met through efficient irrigation water management. Quantifiable objectives are approximations, expressed in acre-feet, of the practical, cost-effective portion of a TB that can be achieved by improving irrigation water management. Progress toward implementing projects, including submittal of funding applications, construction and phasing, and operation, will be identified for each activity and updated annually.

Regional Plan participants will continue to evaluate and pursue additional regional cooperation and inter-district management opportunities if mutual benefits can be identified and funding sources secured.

Refuge Water Supply Contracts, Article 17

Article 17 of the Refuge Water Supply Contracts addresses water conservation. It requires an adequate Refuge Plan to be submitted by each refuge to Reclamation prior to activities such as pooling and rescheduling of water supplies. The Criteria for Developing Refuge Water Management Plans (Refuge Criteria) provides a common methodology or standard for efficient use of water by Federal Wildlife Refuges, State wildlife management areas and resource conservation districts that receive water under the provisions of the CVPIA. The first Refuge Criteria was established in 2004 and is currently being revised for consistency and language clarity. Reclamation anticipates Refuge Criteria revision completion in 2009.

Currently, 15 refuges are required to prepare a Refuge Plan. However Pixley and Sutter National Wildlife Refuges do not currently receive contract water.

San Joaquin Valley Refuges

Kern National Wildlife Refuge
Merced National Wildlife Refuge
Pixley National Wildlife Refuge
San Luis National Wildlife Refuge
Los Banos Wildlife Area
Mendota Wildlife Area
North Grasslands Wildlife Area,
Salt Slough Unit
North Grasslands Wildlife Area,
China Island Unit
Volta Wildlife Area
Grassland Resource Conservation District

Sacramento Valley Refuges

Colusa National Wildlife Refuge
Delevan National Wildlife Refuge
Sacramento National Wildlife Refuge
Sutter National Wildlife Refuge
Gray Lodge Wildlife Area

The Refuge Plan content is similar to those of agricultural and urban districts but has been written to be flexible enough to accommodate the management requirements for wildlife habitat. The Refuge Plans examine various aspects of Refuge operations including a description of the Refuge, an inventory of the available water resources, and BMPs. Plans also follow the same submittal procedures as the agricultural and urban districts and must be revised every five years. Additionally, Refuges report progress on their BMPs annually directly to Reclamation.



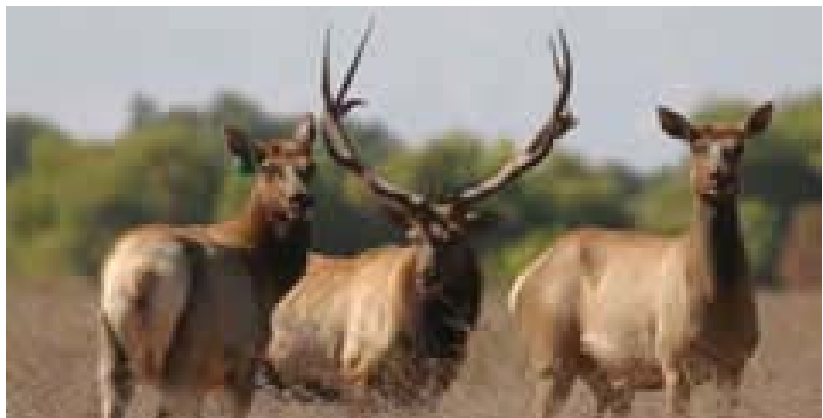


Critical BMPs (every Refuge is expected to implement)

- Management programs;
- Water shortage contingency plan;
- Pricing structure (where there are customers);
- Plan to measure deliveries to customers (where there are customers); and
- Water conservation coordinator.

Exemptible BMPs (some BMPs below are not appropriate or possible for the Refuge to implement; in those instances the Refuge must document in a clear and concise manner the specific legal, environmental, or economic constraint to implementing the BMP to claim an exemption)

- Improve management unit configuration;
- Improve internal distribution system;
- Automate water distribution system;
- Plan to measure outflow;
- Incentive Pricing;
- Construct and operate operational loss recovery systems;
- Optimize conjunctive use of surface and ground water;
- Facilitate use of available recycled urban wastewater that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to wildlife management goals;
- Mapping; and
- CALFED Water Use Efficiency program goals.





Partnerships

Partnerships with California's Agricultural Water Management Council



The Agricultural Water Management Council (Council) was formed as an outgrowth of the AB 3616 legislation, the Agricultural Efficient Water Management Act of 1990. This Act required the Department of Water Resources to establish an advisory committee consisting of state, federal, local agencies, environmental and public interest groups, and other interested parties to develop a list of efficient water management practices for agricultural water suppliers.

At the request of Governor Wilson, a Memorandum of Understanding (MOU) was signed in 1996 between the agricultural, environmental, and public interest communities to further address efficient use of agricultural water in California.

The Governor's policy and the MOU focus on consensus-based voluntary agreements between all water interests. All members of the Council are signatories to the MOU. The MOU established the Council and provides guidance for a reporting process by which signatories evaluate and endorse water management plans. There are currently 78 signatories, representing 35 % of all California's irrigated agriculture.

Agricultural water suppliers will advance efficient water management through voluntary planning, implementing, and evaluating specific irrigation practices believed to improve water management. The MOU provides a specific list Efficient Water Management Practices (EWMPs) that water suppliers address in their Water Management Plans and commit to implementing at the highest practically feasible level.

Reclamation has been working in partnership with the Council to provide funding for water conservation assistance and information to Reclamation contractors and the general public. The objectives of the partnership are to:

- Provide technical assistance, tools, and methodologies to help EWMPs implementation and agricultural water management planning;
- Encourage further cooperation among the agricultural and water communities to share information and to initiate joint efforts in efficient water management;
- Promote the value of efficient agricultural waster management to agricultural water suppliers, agricultural water users, and the environmental and urban communities;
- Support water suppliers' efforts to provide on-farm water conservation services for water users; and
- Maintain a website that facilitates the reporting of Annual Updates for Reclamation's agricultural contractors.

For more information, visit www.agwatercouncil.org.

Partnership with California Urban Water Conservation Council



The California Urban Water Conservation Council (CUWCC) was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. CUWCC's goal is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. CUWCC also provides an online database for water agencies to submit their annual BMP updates. A historic Memorandum of Understanding (MOU) was signed by nearly 100 urban water agencies and environmental groups in December, 1991. Since then CUWCC has grown to 394 members. By signing the CUWCC's MOU, members agree to implement 14 BMPs to conserve water in urban areas. Reclamation actively participates on the Steering Committee to ensure CUWCC's BMPs and any revisions meet the intent of the Criteria.

BMPs are an integral part of a District's Water Management Plan. During 2008, CUWCC began to revise the BMPs to include current technology and credit agencies for their innovative water conservation programs. Revisions were proposed for 11 of the 14 BMPs. The three BMPs which were not addressed in this revision were either revised in 2007 or were already in the process of revision in 2007. Changes are:

- Grouping of BMPs into categories of programmatic similarity;
- Designation of some BMPs as Foundational BMPs, expected to be implemented by all water agency signatories as a permanent commitment to water conservation;
- Elevation of water savings goals;
- Refocusing of BMP activities onto the activities which save water;
- Introduction of the Flex Track menu options for Programmatic BMP categories as a method for agencies to focus their conservation program on practices that will work for them; and
- Combination of former coverage requirements and Criteria sections into new coverage requirements.

These revisions were finalized at the December 2008 Plenary meeting.

For more information, visit www.cuwcc.org.



Integrating Drought Response

Most of California enjoys a Mediterranean-type climate with cool, wet winters and hot, dry summers. Most of the State's average annual precipitation of 24 inches falls between November and March, with the northern half of the state receiving on average approximately twice as much precipitation as the south. Floods and droughts occur often, sometimes within the same year. Therefore, planning for water storage is essential. Good planning and preparation can help agencies maintain reliable supplies and reduce the impacts of supply interruption.



In 2007 and 2008, the Bureau of Reclamation, California Department of Water Resources, and the California Urban Water Conservation Council worked together on updating the Urban Drought Guidebook. The focus of the guidebook is to provide a step-by-step process to anticipate and respond to water shortages. A copy of the guidebook is available at http://www.usbr.gov/mp/watershare/documents/urban_guide/UrbanDroughtGuide_Final.pdf.

After the Guidebook was completed, a series of 11 drought workshops were held throughout the state to promote the planning steps outlined in the Guidebook. The locations spanned from Davis to San Diego with 564 participants attending.

Another tool available to help drought impacted communities and agencies is the Reclamation States Emergency Drought Relief Act of 1991 (PL 102-250). The Drought Relief Act has two basic directives to provide assistance during droughts:

Title I - Provides assistance after a drought emergency has been declared by the Governor of the affected state or the governing body of the affected tribe. Proposals can include the construction, management, and conservation activities to minimize damages from drought conditions. Any construction activity is limited to temporary facilities, except for wells.

Title II - Provides assistance for the administering and implementing drought contingency planning. Drought contingency planning includes studies to identify opportunities to conserve, augment and make more efficient use of water supplies. Examples of projects funded include groundwater studies, watershed modeling, and installation of stream monitoring equipment.

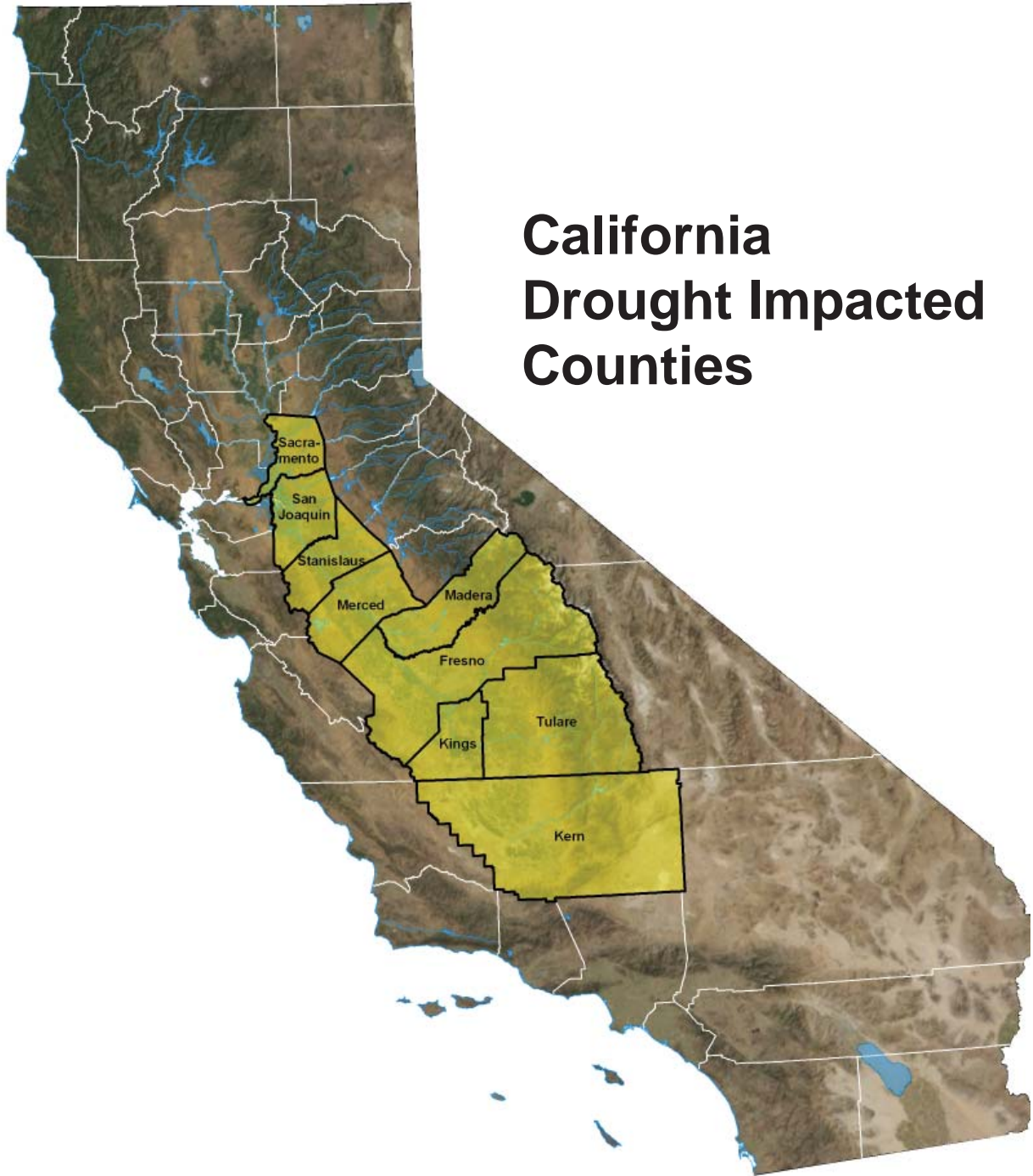
In FY 2008, Reclamation secured funding for the Round Valley Indian Tribes (Tribes) under the Drought Relief Act for both Title I and Title II activities. The Tribes were awarded \$120,000 to provide water to riparian vegetation through the installation of temporary drip irrigation lines and to expand the existing planting regime to provide better fish and wildlife habitat throughout the Mill Creek corridor. Without this funding, six years of restoration work to repair the stream corridor were in jeopardy. The Tribes also received \$123,000 to develop and implement a comprehensive basin-wide groundwater/drought management plan. The development of the plan will provide a resource to assist the Tribes and other basin residents in identifying opportunities to conserve, augment, and make more efficient use of water supplies in response to drought conditions.

Drought

During 2008, the Mid-Pacific Region utilized the Drought Relief Act as authority to sell Orland Project water to a CVP contractor.

In addition to providing funds for specific projects, the Drought Relief Act was utilized in 2008/2009 to allow Reclamation to participate in the State's Drought Water Bank (Bank). The Bank was created to help facilitate transactions between buyers in their purchase of water from willing sellers.

Here is a link to receive more information: <http://www.usbr.gov/drought/>.



Other Water Conservation Programs

Water for America - The New Initiative that Incorporates Two of Reclamation's Successful Water Conservation Programs

With much of the West experiencing moderate to extreme drought conditions, water supply is at the forefront of everyone's mind, including homeowners, recreationists, and law-makers alike. State and Federal governments are taking critical steps to help ease water supply strains in the face of shortages, population growth, and competition between urban use, agriculture, and the environment. To help mitigate the water challenges in the West, Reclamation unveiled its multi-agency plan to secure critical water supplies -- the Water for America Initiative.

The Water for America Initiative was presented to the public in July of 2008. The new initiative is meant to "help communities meet increasing demands on limited water supplies through collaborative projects, water conservation technologies, and expanded information sharing."

To meet its goals, the Water for America Initiative includes three strategies for water management planning: Plan for Our Nation's Water Future; Expand, Protect, and Conserve Our Nation's Water Resources; and Enhance Our Nation's Water Knowledge.

The second strategy, "Expand, Protect, and Conserve Our Nation's Water Resources" will encompass two of Reclamation's most successful water conservation programs: The Water Conservation Field Services Program (WCFSP) and Water 2025. Through these programs, Reclamation will continue to increase water use efficiency and conservation efforts and improve water management through grants and technical assistance.

Under the new initiative, some aspects of these two grant programs will change, while others will remain the same. Below is a summary of how the Water for America Initiative will modify Water 2025 grants and the WCFSP.

Challenge Grants: Under the Water for America Initiative, the Water 2025 Challenge Grant Program has become the Water for America Challenge Grant Program. The Water for America Challenge Grant Program now includes the Water Marketing and Efficiency Grants and System Optimization Review Grants (SORs), in addition to adding two new grant opportunities. Additional grant opportunities include Advanced Water Treatment Grants for pilot and demonstration projects that test the viability of advanced water treatment technologies and Species of Concern Grants. The Species of Concern Grants are designed to benefit federally listed species, and help to prevent the decline of candidate species.

Applications for Challenge Grants will be accepted under four different funding opportunities (as described above). Challenge grants will remain cost-shared programs where Reclamation can fund up to 50% of total project costs, not to exceed \$300,000. Competition for Challenge Grants will be Reclamation-wide, encompassing all 17 western states that Reclamation serves and will focus on large-scale water conservation efforts.

WCFSP: Developed in 1996, the WCFSP is a regionally and locally administered program, designed to provide technical and financial assistance for water management planning, implementation, demonstration projects, and education. Although the WCFSP is under the umbrella of the

Other Water Conservation Programs

Water for America Initiative, administration and grant competition remains at the regional and local levels. However, beginning in Fiscal Year 2009, the WCFSP began incorporating Reclamation-wide selection criteria which emphasizes water conservation planning and efficiency improvements. In addition to the Reclamation-wide selection criteria, each WCFSP funding announcement will include other criteria developed at the regional or local level to account for local water conservation priorities and goals. The WCFSP will also remain a 50% cost-shared program. Funding for the WCFSP will be capped at \$100,000 per grant; however, the Mid-Pacific Region choose to limit funding to \$25,000 to effectively meet local needs.

Despite the modifications, the core goals of Challenge Grants and WCFSP remain the same: stretch existing water supplies while improving water management and efficiency. Grant programs have been instrumental in transforming water conservation efforts throughout the West, and under the Water for America Initiative, these programs will continue to be a major catalyst for efficiency implementation measures to help decrease water demands and improve water supply reliability.

For more information, visit www.usbr.gov/wfa

20x2020 Program

On February 28, 2008, California Governor Schwarzenegger introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. As part of the plan, the Governor directed state agencies to prepare and implement a program to achieve a 20% reduction in statewide average per capita water use by year 2020 (20x2020 Program or Program). Several state agencies involved in water planning and management have joined together to form an agency team (20x2020 Team) to direct the development and implementation of the 20x2020 Program. The 20x2020 Team consists of five state agencies: Department of Water Resources; State Water Resources Control Board; California Energy Commission; Department of Public Health; and California Public Utilities Commission.

Reclamation and the California Urban Water Conservation Council are also participating on the team. The 20x2020 Program is compatible with, and further supports, other California statewide water planning efforts such as the Delta Vision and the California Water Plan Update (Bulletin 160). These programs share the common goals of identifying and implementing strategies for sustainably managing the valuable water resources of California to support both its environmental and economic functions. Water conservation, including demand management, has been identified as a priority in each of these separate efforts. Legislative, regulatory, and administrative agencies at the federal, state, regional and local levels are now focusing more actively on water conservation in a primary position for responding to California's current climate conditions and challenges for future water supply.

The Mid-Pacific Region is assisting in this program by providing financial assistance, technical expertise, and water management plan implementation. The information obtained from this effort will help Reclamation plan for future water supply shortages. The 20x2020 Team is currently establishing gallons-per-capita-day baselines, determining conservation targets, assessing performance metrics, and creating an implementation plan to accommodate the variety of climates and demographics within the State of California. More information can be found at www.swrcb.ca.gov/water_issues/hot_topics/20x2020/index.shtml.

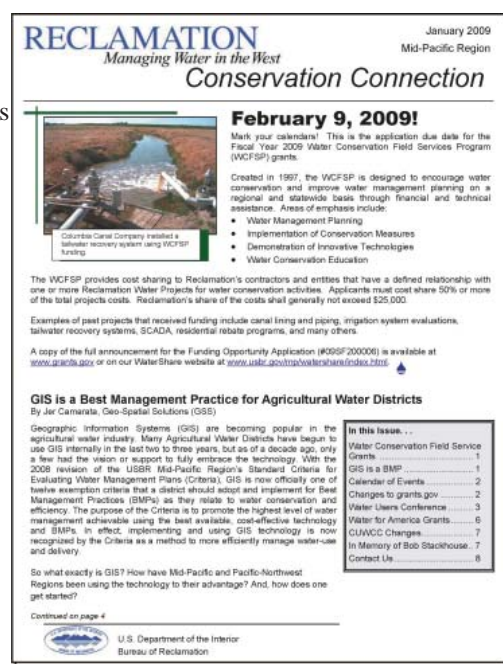


Public Outreach

Public education and outreach are key elements in improving the management of water resources to more effectively meet present and future needs. The Mid-Pacific Regional staff promotes water conservation through newsletters, display booths at conferences, and the WaterShare.com website.

Conservation Connections is a quarterly newsletter which highlights water conservation projects being implemented by Reclamation water districts, emerging water conservation technology, calendar of events, grant opportunities, and other water related issues. If you would like to receive the newsletter and are not currently on the mailing list, please contact Kevin Clancy at 916-978-5223.

The Region's water conservation staff also attend numerous conferences and expositions to provide information on the Region's water conservation assistance programs and grant opportunities. With the addition of a new display, the team has developed a portable professional presentation that is easy to transport and set up. In 2008, the team had booths at the Water User's Conference, California Irrigation Institute Annual Conference, and at the California Environmental Protection Agency and State Water Resources Control Board Funding Fair. It is anticipated that the staff will continue to participate in these and other conferences throughout the Region.



The WaterShare website at www.usbr.gov/mp/watershare/index.html is another tool to help keep water conservation district staff and others updated on what is happening in the Region. The website has information so that districts can find out about open grant opportunities, water management plan criteria, and links to other useful water websites. Also on the website, WaterLearn has fun activities for school children to engage them in becoming wise water users.

The American River Water Education Center

The Mid-Pacific Region used the Central Valley Project Improvement Act of 1992 authority to establish a center that would have numerous hands on water conservation devices and serve as a water conservation visitor center, open to the public. Because of the bombing at the federal building in Oklahoma City, security concerns prevented this center being opened to the public at the regional federal building. It was agreed by the Region and CCAO that the center be located at Folsom to meet the needs of the public in water conservation and to incorporate the Folsom Dam tours.

Public Outreach

This effectively linked Reclamation's role in operating the dam for water and power needs with its additional mission of managing those resources as efficiently as possible. The Region, Denver, CCAO and State Parks provided funding to establish the center at Folsom.

The American River Water Education Center (ARWEC) at Folsom Dam has been welcoming visitors since 1999. Originally the ARWEC served dual purposes, housing the offices for the Folsom dam tours and as a place to demonstrate water conservation to the greater Sacramento community. In 2007, Folsom Dam tours were eliminated indefinitely. Today, ARWEC serves as CCAO's water conservation center office. The center is staffed with BOR staff, part-time contracted personnel and an active volunteer group.

ARWEC related activities include guided tours of the visitor center and Folsom Lake area, self guided visits, curriculum driven schoolhouse programs directed by staff and guided and self guided garden walks. The center attracts visitors utilizing the nearby American River Parkway. Staff and volunteers also participate in outreach programs to schools, retirement homes, clubs and organizations focusing on Folsom Dam and/or water related topics. ARWEC hosts and attends special events such as Get W.E.T.(Water Education Today), Salmon Festival, Creek Week and the Fair Oaks Harvest Fest.



The center and staff assist water districts in meeting their water conservation requirements required by Reclamation as directed by the Water Conservation Field Service Program (WCFSP).

During the summer of 2007, the buildings that compose the ARWEC were relocated to a nearby site to make room for the construction of

a new bridge. A demonstration garden now features low water use and drought tolerant plantings and water conservation irrigation systems and apparatus that can be used by local homeowners to conserve water. In addition, there is a covered amphitheater, displays about power delivery and solar power, a picnic area, and outdoor public restroom facilities.

ARWEC supports Reclamation's vision through outreach in the community, innovative exhibits, compelling programs, and participation with other groups and agencies. ARWEC supports Reclamation's mission by providing a public facility that presents information about how an individual can protect water, energy, and other resources by using simple conservation techniques and offers an interesting place to learn the importance of efficient water and power use locally.

Regional Area Offices



Central California Area Office 7794 Folsom Dam Road Folsom, CA 95630-1799

The Central California Area Office (CCAO) Water Conservation Field Services Program (WCFSP) emphasis is on urban water conservation. With a high concentration of the Region's municipal and industrial water districts, Pete Vonich and Lucille Billingsley have designed a WCFSP that emphasizes providing planning assistance and implementation of the Districts' Best Management Practices. Districts in this area range from national leaders in the water conservation field to districts that are just implementing the most basic water conservation measures (i.e. metering and volumetric pricing).

CCAO's American River Water Education Center (ARWEC) features water conservation displays and water efficient landscaping. The ARWEC offers an exciting way to experience the watershed of the American River, and appreciate the importance of water management. ARWEC provides water educational tours to schools throughout the area.

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Regional Offices

Klamath Basin Area Office 6600 Washburn Way Klamath Falls, Oregon 97603-9365

As a part of its Water Conservation Field Services Program, the Klamath Basin Area Office (KBAO), located in Klamath Falls, Oregon enjoys a rich wealth of wetlands and wildlife habitat.

During the years 2006-2008, KBAO purchased high-density polyethylene pipe to furnish to Irrigation Districts which are currently operating Klamath Project facilities. The districts have completed a Water Conservation Field Services Program Request for Application (RFA) competitive grant process and are installing or have installed the pipe (see figs 1 and 2). The pipe is being installed into existing canals and ditches with the intention of minimizing water flow conveyance losses through seepage, evaporation, and obstructions (weeds, trees, junk, etc) where canals and ditches traverse rocky and sandy soil units.

An additional part of the FY08 KBAO WCFSP is to provide funding to irrigation districts who have been selected through a RFA competitive grant process for flow measurement structures and equipment procurement and installation. The flow measurement structures and equipment is also being installed directly into existing canals or mounted on existing pipes which provide water flow service to the Irrigation Districts.

One other water conservation-related grant in place at this time is the Miller Hill Pumping Plant Rehabilitation being undertaken by the Klamath Irrigation District through a Water 2025 grant awarded in 2007. The pumping plant design is complete and construction has begun in fall, 2008.



Figure 1 – Installation of HDPE pipe furnished through KBAO WCFSP grant to Tulelake Irrigation District into the N Canal Extension, Klamath Project, California



Figure 2 – Photo showing section of Van Brimmer Ditch, Klamath Project, Oregon, where HDPE pipe was furnished through a KBAO WCFSP grant and installed by Van Brimmer Ditch Company as grant recipient.



Figure 3 - Flow measurement equipment purchased by Langell Valley Irrigation District and installed in West Canal, Klamath Project, Oregon, through a KBAO WCFSP grant.



Figure 4 – Miller Hill Pumping Plant, Klamath Project, Oregon prior to rehabilitation by the Klamath Irrigation District through a Water 2025 grant.

All water districts served by the KBAO that are required to complete Water Management Plans under the Reclamation-Reform Act are in compliance. KBAO is also providing technical assistance to districts where appropriate.

KBAO continues to work with irrigation districts, Oregon Water Resources Department and others to create public education venues which focus on the need to maximize the use of the area's limited water resources.

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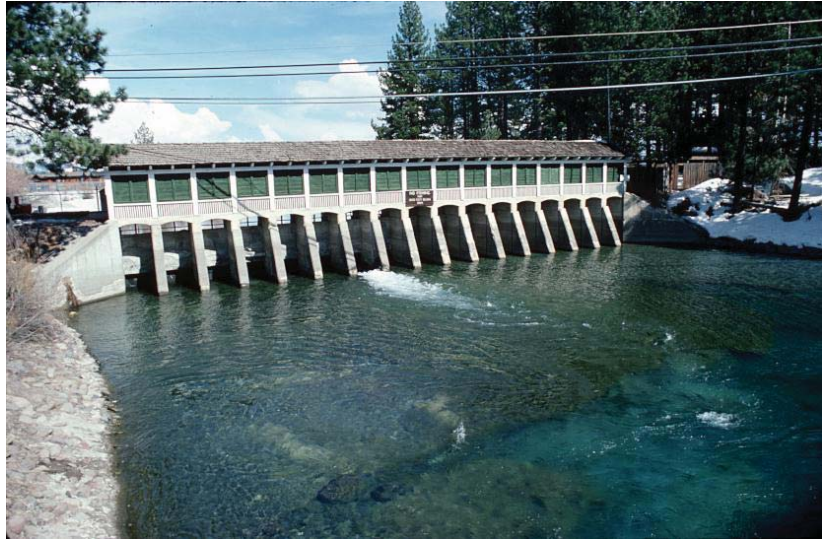


Figure 5 – Miller Hill Pumping Plant, Klamath Project, Oregon, during current rehabilitation construction by the Klamath Irrigation District through a Water 2025 grant.

Regional Offices

Lahontan Basin Area Office 705 North Plaza Street, Room 320 Carson City, Nevada 89701-4015

Lahontan Basin Area Office's (LBAO) water conservation efforts are primarily focused on the water districts of the Truckee and Carson Rivers in Nevada and California that benefit from Federal water projects. The LBAO and its Fallon Field Office provide technical assistance and oversight for the water conservation plans and water conservation activities of irrigation districts and other contractors on the Newlands, Washoe, Humboldt, and Truckee River Storage Projects. The LBAO also partners with municipalities and local governments within those Projects for water conservation activities. WCFSP activities have ranged from drainage studies to canal automation, with a focus on maximizing water distribution efficiency and minimizing the amount of water diverted from the Truckee River. Improved water measurement has been a key element to much of the work done with the Newlands Project, which is LBAO's largest contractually transferred irrigation Project.



Water education is also a major focus in the Lahontan Basin. Partnerships have been established with the Natural Resources Conservation Service to provide information about on-farm management practices to water users. In addition, the LBAO continues to promote continuing education among district personnel by sponsoring courses, training, and tours.

Nevada's State Water Plan

The Nevada Division of Water Planning in the Department of Conservation and Natural Resources has developed a State Water Plan. The program covers activities ranging from water conservation to water education. In addition, the State of Nevada has adopted statutes requiring any entity that supplies water for municipal, industrial, or domestic purposes to have a state approved water conservation plan. The plans must encourage water conservation in the entities' service area, and provide incentives for water conservation activities.

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**Northern California Area Office
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The Sacramento Valley presents a unique water management challenge. Dennis Perkins, Water Conservation Specialist, and management, at the Northern California Area Office (NCAO) have targeted the monitoring and automation of irrigation delivery systems and the modernization of districts for improved delivery efficiency, as a high priority in the northern area of the Sacramento Valley. Through collaborative district level water conservation planning, combined with Field Service Program, Water 2025, and CALFED grant funding, the districts have implemented aggressive modernization programs. Successful implementation of

state-of-the-art monitoring, automation, canal level management, and measurement have provided significant improvements and programs resulting in water and energy savings.



A partnership with the Cal Poly Irrigation Technology and Research Center through the Water Conservation Field Services Program has provided technical assistance (Rapid Assessment Programs) to agricultural water districts to explore technologies that improve the water diversion and canal delivery systems found along the Sacramento River, and the Tehama and Colusa Canals.

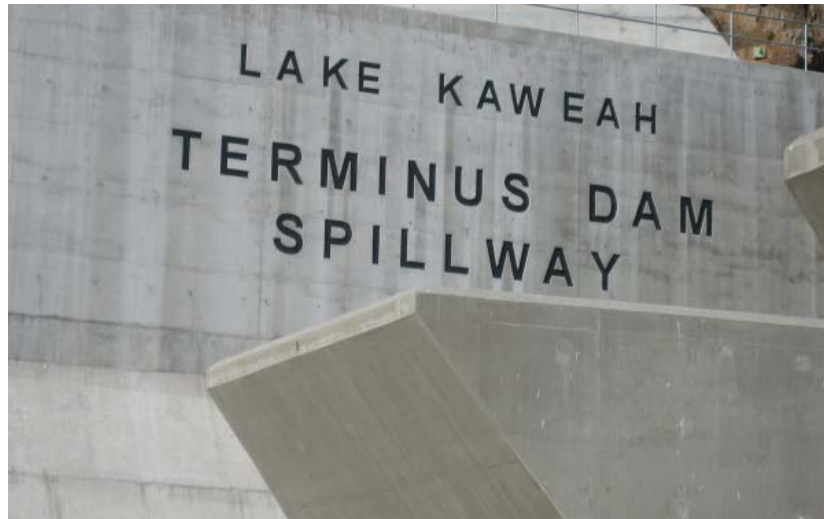
Water Education is also a priority. Reclamation has provided financial support to Turtle Bay Arboretum. The Turtle Bay Arboretum in Redding provides displays and interactive indoor and outdoor lessons on water and energy conservation. This single facility reaches over 150,000 school children and visitors each year. The Arboretum provides an educational experience about conservation of both agricultural and urban water use and the understanding of the importance of the Sacramento River's water resources to farming, cities and the environment.

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Regional Offices

South-Central California Area Office 1243 N Street Fresno, CA 93721-1813

The service area assisted by the South-Central California Area Office (SCCAO) has the most irrigated farmland of any area office in Reclamation with over 2.5 million irrigated acres. In addition, the area serves several large urban water districts and ten wildlife refuges. Dave Woolley is the Water Conservation Specialist in the SCCAO who has designed his grant programs to meet the needs of a diverse customer base and widely differing water management challenges. Planning assistance remains a priority in the SCCAO where CVPIA water management criteria applies. Currently 54 of 66 water service contractors have completed Plans. Technical and financial assistance is made available to these districts to implement Plan activities.



Partnerships are a central feature of the SCCAO program: Cooperative agreements with the Cal Poly Irrigation Training and Research Center, California Water Institute, and Center for Irrigation Technology at Fresno State make it possible to provide training and technical assistance to districts.

Water conservation education is promoted through a demonstration facility called the Friant Water Education Center and Garden (Visitor Center).

The Visitor Center was built through a multi-agency partnership with the Bureau of Reclamation, Center for Irrigation Technology at Fresno State, Millerton State Parks, and the California Division of Forestry. Tours are conducted emphasizing water conservation, water-wise uses, and water efficient plants.



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Regional Directors Awards

To encourage outstanding leadership and program innovation within the water conservation community, the Regional Team selects winners for the Annual Regional Directors Award. These awards are presented at the Annual Water Users Conference. The following are the 2006 – 2008 award recipients along with a description of their awards and accomplishments:

Horsefly Irrigation District

2006

Horsefly Irrigation District (HID) was honored for their outstanding water conservation efforts. They received one of the two Regional Director's Award presented in 2006. HID operates in Oregon within the U.S. Bureau of Reclamation's Klamath Project and has embarked on a proactive program that conserves and enhances operations through system modernization.

In a combined effort with Reclamation, HID has proven its commitment to conservation by installing pipe where excessive water loss was occurring in open canals. Piping is a top priority for HID due to the underlying soils and geology in the area that lose, at a minimum, 30% of the conveyed water flow. The conservation of this loss translates to an 8 acre-feet per day savings, which results in a savings of 940 acre-feet at one pump station.

HID's initiative and commitment to conservation resulted in modernization projects such as diversion points to accommodate future water measurement, on-farm improvements, tail water recycling and a canal de-watering program to control moss without chemicals. HID also partnered with Oregon Energy Trusts in an effort to update pumps and motors, including variable speed units. HID manager Don Russell said of this effort "Again, this is most difficult given a small budget. Stepping out of the 1940's into this century is indeed costly, but worth it."

City of Roseville

2006

The City of Roseville received their award for its outstanding efforts in water conservation. The City developed and implemented numerous water conservation programs and made significant strides to meet all of the Best Management Practices as established by the California Urban Water Conservation Council.

In addition to addressing the Council's Best Management Practices, the City offers other programs and services to assist its customers with water efficiency practices. The City serves as a model to others in California by linking its energy and water conservation efforts. Some of the more innovative water conservation programs that the City provides for its customers include the installation of two computerized weather stations; recycled water distribution for golf courses, parks and streetscapes; and partnering with Roseville Electric to promote a high efficiency washing machine rebate program and provide joint energy and water audits for residential and commercial customers, including an on-line audit program utilized by over 1,600 customers. Many of these conservation programs were made possible with grants from Reclamation's Water Conservation Field Services Program.

Awards

In addition to its exemplary programs and services, the City of Roseville has taken a leadership role in working with other water suppliers to encourage regional planning and resource conservation.

Orland-Artois Water District

2007

Orland-Artois Water District was formed in 1954 and has a long-standing relationship with Mid-Pacific Region's Water Conservation staff. The District irrigates 29,000 acres of land, and has been an active participant in the Mid-Pacific Region's Water Conservation Program since the program's inception in 1996.

With a staff of four, the District serves as one of the larger districts on the Tehama Colusa Canal in the Sacramento Valley. Orland-Artois has maintained a current water conservation plan with timely annual updates and continues to modernize and implement water conservation projects through the installation of Supervisory Control and Data Acquisition (SCADA) and the development of several District to Farmer in-the-field education programs. Also, the District was among the first to develop a GIS database demonstration project in coordination with CSU, Chico.

The District, through impressive leadership, continues to seek new and innovative methods to improve water management and conservation within the agricultural community.



Reclamation District 108

2008

Reclamation District 108 (RD-108) initiated a "rice spill reduction program" with their rice growers to control and minimize flows across the rice fields of the district. The minimized flows were accomplished by improving control of field level diversion. Monitoring was accomplished by placing spill reduction boards at the bottoms of their rice fields. The program utilized a low cost, but innovative approach to water conservation. By incentivizing growers and encouraging their active participation, large water savings were accomplished. The results were reduced water diversions totaling over 40,000 acre feet.

RD-108 has also worked cooperatively with California Department of Fish and Game to develop and install environmentally friendly fish screens while working with Reclamation to install SCADA for diversion pump management, flow monitoring and control on 14 pumping plants. RD-108, with the aid of Cal Poly ITRC, installed 30 long crested weirs in their canal systems for canal water level control, and most recently installed a Rubicon Total Channel Control system in a main canal that services 12,000 acres. The district has provided advanced training to water operators, and sponsors a distribution uniformity mobile lab to service landowners throughout the county.

RD-108 sets an example for the Integrated Regional Water Management Planning group that represents contractors across the Sacramento River area of Northern California through their long range water conservation planning, innovative thinking, and cooperation with multiple agencies.

Mid-Pacific Staff



Sheri Looper is the Water Conservation Program Team Leader. Sheri began with Reclamation in September of 2005. She has a Bachelor of Science in Agriculture from California State University, Chico and a Master's Degree from the University of California, Davis. Sheri came to Reclamation from U.C. Davis, where she served as a project manager, developing and conducting blood platelet studies. She has co-authored several research papers related to the process of freeze drying blood platelets and is the co-inventor of a patented freeze-dried platelet product for use in wound healing. Contact Sheri Looper at 916-978-5219 or slooper@mp.usbr.gov



Bryce White has specialty in contract and grant administration. He is a professional engineer and has been a federal employee since 1980. He has previous contracting experience working for the Navy and Air Force. Bryce also owned and operated a small farm for 10 years. Bryce graduated from California State University, Sacramento with a Bachelor of Science in Engineering. He has served as a Water Conservation Specialist since 2000. Contact Bryce White at 916-978-5208 or bwhite@mp.usbr.gov



Laurie Sharp is the Water Conservation Support Specialist. She began her career with Reclamation in 1978, working in the Steno Section and Procurement. Laurie took a 10 year break from government service and lived in England running her own business. When Laurie returned to the United States, she worked for the Postal Service as a carrier and then served as a supervisor for both rural and city carriers at the Roseville and Placerville Post Offices. She rejoined the Bureau of Reclamation in 2001 and has worked in Human Resources and in Resources Management as Division Secretary and in Finance/Budget. Laurie joined the Water Conservation Team in August 2006. Contact Laurie Sharp at 916-978-5232 or lsharp@mp.usbr.gov



Kevin Clancy is another team member of the Water Conservation Staff. He began with Reclamation in June of 2007. Kevin recently graduated from Colorado State University (CSU) with a Bachelor of Science in Watershed Science. While at CSU, Kevin assisted in studies regarding fish migration in urban stream systems and invasive plant species along the Green and Yampa Rivers in Dinosaur National Monument. He also worked during the summers with the Forest Service conducting stream condition inventories and habitat assessments. Prior to returning to college, Kevin did accounting and financial work for a resort development company located in the Aspen, Colorado valley. Contact Kevin Clancy at 916-978-5223 or kclancy@mp.usbr.gov



Anna Sutton is the newest member of the team, joining us in February 2008. She comes to us from the Army Corps of Engineers where she worked for 6 years in the Wetland Regulatory Program in Salt Lake City and Sacramento. While with the Corps, she spent 6 months supervising reconstruction projects in Iraq. Anna received her Bachelor of Science in Animal Science and a Masters of Science in Resource Management from Cal Poly, Pomona. For her thesis, she spent a summer sampling flora, fauna, and soils in the Mojave Desert for the Bureau of Land Management's Off-Highway Vehicle program. Prior to college, she served 5 years in the United States Marine Corps, stationed at Camp Pendleton. Contact Anna Sutton at 916-978-5215 or asutton@mp.usbr.gov

